

another will be augmented by removing the Prism still further from the Object-Glasses: And these little Arcs must be distinctest and whitest at their middle, and at their ends, where they begin to grow confused they must be coloured. And the Colours at one end of every Arc must be in a contrary order to those at the other end, by reason that they cross in the intermediate white; namely their ends, which verge towards  $r\xi$ , will be red and yellow on that side next the Center, and blue and violet on the other side. But their other ends which verge from  $r\xi$  will on the contrary be blue and violet on that side towards the Center, and on the other side red and yellow.

Now as all these things follow from the Properties of Light by a mathematical way of reasoning, so the truth of them may be manifested by Experiments. For in a dark room, by viewing these Rings through a Prism, by reflexion of the several prismatic Colours, which an assistant causes to move to and fro upon a Wall or Paper from whence they are reflected, whilst the Spectator's Eye, the Prism and the Object-Glasses (as in the 13th Observation) are placed steady: the position of the Circles made successively by the several Colours, will be found such, in respect of one another, as I have described in the Figures  $abxv$ , or  $abxv$ , or  $\alpha\beta\xi\gamma$ . And by the same method the truth of the Explications of other Observations may be examined.

By what hath been said the like Phænomena of Water, and thin plates of Glass may be understood. But in small fragments of those plates, there is this further

further observable, that where they lye flat upon a Table and are turned about their Centers whilst they are viewed through a Prism, they will in some postures exhibit waves of various Colours, and some of them exhibit these waves in one or two positions only, but the most of them do in all positions exhibit them, and make them for the most part appear almost all over the plates. The reason is, that the superficies of such plates are not even, but have many cavities and swellings, which how shallow soever do a little vary the thickness of the plate. For at the several sides of those cavities, for the reasons newly described, there ought to be produced waves in several postures of the Prism. Now though it be but some very small, and narrower parts of the Glass, by which these waves for the most part are caused, yet they may seem to extend themselves over the whole Glass, because from the narrowest of those parts there are Colours of several Orders that is of several Rings, confusedly reflected, which by refraction of the Prism are unfolded, separated, and according to their degrees of refraction, dispersed to several places, so as to constitute so many several waves, as there were divers orders of Colours promiscuously reflected from that part of the Glass.

These are the principal Phænomena of thin Plates or Bubbles, whose explications depend on the properties of Light, which I have heretofore delivered. And these you see do necessarily follow from them, and agree with them, even to their very least circumstances; and not only so, but do very much tend to their proof. Thus, by the 24th Observation, it appears, that the rays